

Name: _____

Date: _____

HW STATE OF THE ATMOSPHERE: PRESSURE VARIATIONS

For each statement below, write true or false

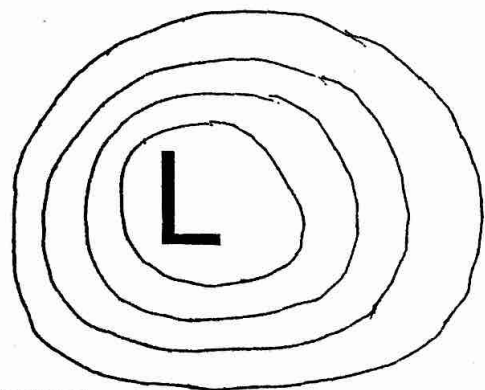
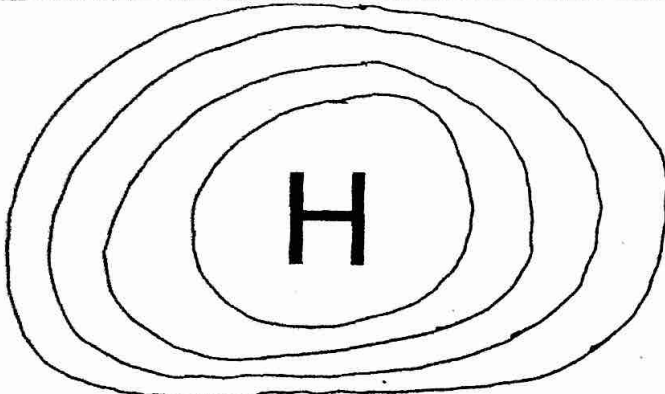
- _____ 1. Air is denser near Earth's surface than high in the atmosphere.
- _____ 2. Particles of air in the atmosphere exert pressure on Earth's surface.
- _____ 3. Air pressure is greater at the top of a mountain than at lower elevations.
- _____ 4. In the troposphere, as air temperature increases, generally air pressure increases, too.
- _____ 5. Wind is the movement of air from an area of low pressure to an area of high pressure.
- _____ 6. A barometer is an instrument that measures air pressure.
- _____ 7. Isobars are isolines that connect points of equal pressure.

Complete the table by checking the correct column for each statement



Statement	High Pressure System	Low Pressure System
8. Characterized by sinking air		
9. Characterized by rising air		
10. Air flows toward center		
11. Air flows away from center		
12. Air moves clockwise in the northern hemisphere		
13. Air moves counter clockwise in the northern hemisphere		
14. Associated with fair weather		
15. Associated with clouds and precipitation		

16. Label the isobars surrounding the following systems, with 1024mb, 1020, 1016, and 1012mb
 17. Draw arrows to indicate the direction and movement of the wind.



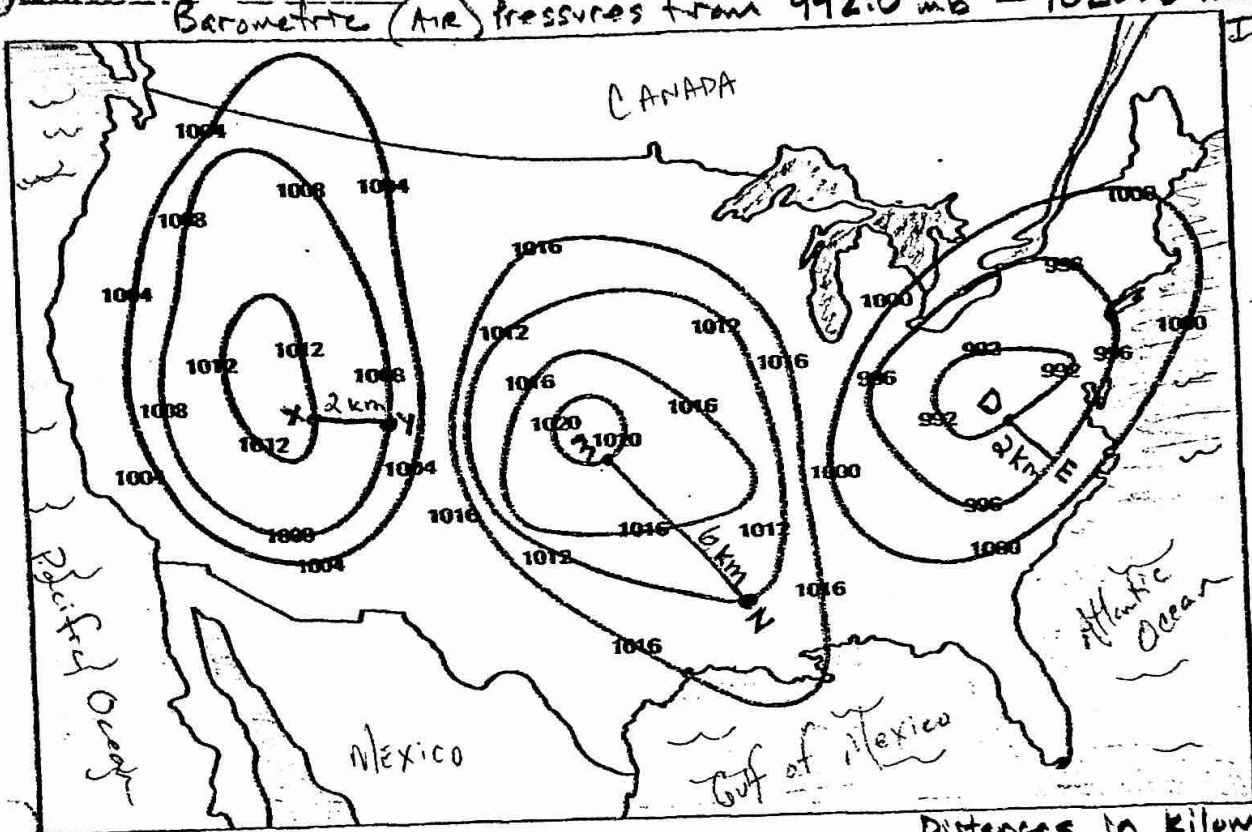
18. Convert the following using pressure chart on page 13 of the ESRT's:

- a. 1012.0mb _____ in
- b. 992.0mb _____ in
- c. 1034.9mb _____ in
- d. 30.00in _____ mb
- e. 29.45in _____ mb
- f. 29.05in _____ mb

ISOBARS AND PRESSURE SYSTEMS

Barometric (Air) pressures from 992.0 mb - 1020.0 mb

Interval of 4 mb



1. What are the lines on this map called? _____

2. What is the pressure reading for Area X? _____

3. What type of weather is occurring in Area X? _____

4. Determine the pressure gradient between points X to Y. show work include units

$$\text{Gradient} = \frac{\text{change in value}}{\text{distance}}$$

5. Area M is what type of a pressure area? _____

6. What type of weather is occurring in the area? _____

7. Determine the pressure gradient between points M to N. show work include units

$$\frac{\text{mb}}{\text{km}}$$

8. Area D is what type of a pressure area? _____

9. What type of weather is occurring in this area? _____

10. Determine the pressure gradient between points D to E. show work and include units

11. What instrument is used to determine the air pressure? _____

12. What instrument determines wind speed? _____

13. Where would wind speed be fastest? _____